

What is claimed is:

- [Claim 1]** A data analyzing method for a fault detection and classification system comprising:
- (a) extracting a plurality of raw data from the fault detection and classification system;
 - (b) separating the raw data for generating classified data according to a predetermined filtering condition; and
 - (c) utilizing a predetermined statistical method for analyzing the classified data.
- [Claim 2]** The data analyzing method of claim 1 wherein the predetermined filtering condition is used for selecting data corresponding to a particular wafer manufacturing step from the raw data.
- [Claim 3]** The data analyzing method of claim 2 wherein the predetermined filtering condition corresponds to a threshold value of the particular wafer manufacturing step and step (b) generates the classified data by selecting data matching the threshold value from the raw data.
- [Claim 4]** The data analyzing method of claim 1 wherein the predetermined statistical method is a one-way variance analysis, a data mining operation, or a discriminate analysis.